CLAIMS

1. A hydrostatic transmission circuit for a vehicle having at least one first displacement member (1, 2) and at least one second displacement member (3, 4) disposed one after the other in the direction of travel of said vehicle, the circuit comprising at least one main hydraulic pump (52; 252, 252'), two main ducts (50, 54; 250, 254, 250', 254') which are respectively a feed main duct and a discharge main duct, and a first hydraulic motor (10, 20, 210) and a second hydraulic motor (30, 40, 230) for driving respective ones of said first and of said second displacement members (1, 2, 3 4), at least the first hydraulic motor (10, 20; 210, 220) being a dual motor made up of two elementary motors (11, 12; 21, 22; 211, 212; 221, 222), each elementary motor having a feed or discharge first elementary connection (11A, 12A; 21A, 22A) and a discharge or feed second elementary connection (10B; 10C; 20B, 20C), the first elementary connections being united to form a common first main connection (10A; 20A; 210A, 220A) for the first hydraulic motor, while the second elementary connections are mutually separate and form respective ones of the second and third main connections (10B, 10C; 20B, 20C; 210B, 210C; 220B, 220C) of the first hydraulic motor, the first main connection (10A, 20A; 210A, 220A) of the first hydraulic motor (10, 20; 210) being connected to the first main duct (50; 250) while the third main connection (10C, 20C; 210C) of said first motor is connected to the second main duct (54; 254), the second hydraulic motor (30; 40; 230) having a first main connection (30A; 40A; 230A) which is also connected to the second main duct (54; 254) and a second main connection (30B; 40B; 230B) which is connected to a feed or discharge additional main duct (60, 62; 250', 254') as is the second main connection (10B; 20B; 210B) of the first hydraulic motor (10; 20; 210), the circuit further comprising booster means (56, 58; 256, 258) for boosting the feed or discharge ducts and at least one

replenishing valve (70, 80; 110, 270, 270') suitable for being connected to one of the main ducts (50, 54; 250, 254; 250', 254') and suitable for taking up an open configuration in which it enables a replenishing link to be established between the main duct to which it is connected at a pressure-free reservoir (51), and a closed configuration in which it prevents said link from being established;

said circuit being characterized in that it further comprises means (72; 90; 110; 169, 171, 172; 272, 272') for preventing the replenishing link from being established on detecting a condition that reveals a spin situation.

2. A circuit according to claim 1, characterized in that it further comprises a replenish enable/disable valve (72; 90; 272, 272') caused to go between an open position in which it opens the replenishing link and a closed position in which it closes said link, the replenish enable/disable valve being caused to move between its open and closed positions as a function of a parameter expressing said condition that reveals a spin situation.

3. A circuit according to claim 2, characterized in that the replenish enable/disable valve is a solenoid valve, receiving a closure control signal when a condition that reveals a spin situation is detected.

4. A circuit according to any one of claims 1 to 3, characterized in that the condition that reveals a spin situation is the fact that the pressure in the boost duct (58,258) is lower than a determined threshold pressure.

5. A circuit according to claims 2 to 4, characterized in that the replenish enable/disable valve (72; 90; 272, 272') is driven by the pressure in the boost duct (58; 258) against a return force (75; 95) to go between a

replenish enable position (72B; 90B) in which it enables the replenishing link to be established, and a replenish disable position (72A; 90A) in which it prevents said link from being established.

6. A circuit according to any one of claims 2 to 5, characterized in that the replenish enable/disable valve (72; 272, 272') is disposed between the replenishing valve (70; 270, 270') and the reservoir (51).

7. A circuit according to any one of claims 1 to 5, characterized in that the replenishing valve (80) has a moving member mounted to move between a first position and second position, which positions correspond respectively to the open configuration and to the closed configuration of the replenishing valve, said replenishing valve having an opening control chamber (81A) suitable for being connected to one of the main ducts (50, 54) for urging the moving member towards its first position and a closure control chamber (82A) suitable for being fed with fluid so as to urge the moving member towards its second position, and in that said circuit further comprises a control valve (90) suitable, as a function of the pressure in the boost duct (58), for connecting said closure control chamber (82A) to the pressure-free reservoir (51) or for isolating said chamber from said reservoir.

8. A circuit according to claims 5 and 7, characterized in that the replenish enable/disable valve (90) is the control valve.

9. A circuit according to claim 7 or claim 8, characterized in that the closure control chamber (82A) is suitable for being fed with fluid by being connected to one of the main ducts (50, 54).

10. A circuit according to claim 9, characterized in that the opening and closure control chambers (81A, 82A) are suitable for being connected to the same main duct (50, 54), a constriction (83) being disposed between said main duct and the closure control chamber (82A).

11. A circuit according to any one of claims 7 to 10, characterized in that the closure control chamber (82A) is associated with replenishing resilient return means (85) urging said moving member continuously towards its second position.

12. A circuit according to any one of claims 1 to 11, characterized in that the second main connection (10B, 20B) of the first motor (10, 20) and the second main connection (30B, 40B) of the second motor (30, 40) are interconnected via an interconnection duct (60, 62).

13. A circuit according to any one of claims 1 to 11, characterized in that the second connection (210B) of the first motor (210) and the second connection (230B) of the second motor (230) are connected to respective ones of two orifices of an additional main hydraulic pump (252').

14. A circuit according to claim 12 or claim 13, characterized in that it further comprises means (110) for enabling the replenishing link to be established again when the pressure in the discharge main duct becomes higher than a determined limit pressure.

15. A circuit according to any one of claims 1 to 14, characterized in that it further comprises a replenishing selector (69; 169) suitable for putting the main duct (50, 54) that is at the lower pressure into communication with the replenishing valve (70; 80).

16. A circuit according to claim 15, characterized in that the replenishing selector (169) is caused to return to its neutral position, in which it isolates the two main ducts (50, 54) from the replenishing valve (70) when the pressure in the discharge main duct becomes higher than a limit value.

17. A circuit according to claim 16, characterized in that the control means for controlling the replenishing selector (169) comprise control chambers (173, 174) suitable for being connected to respective ones of the main ducts (50, 54) via a respective link duct (175, 176) and, for each control chamber, a pressure reducer (171, 172) which, in an open position, is suitable for enabling a link to be established between a main duct and a control chamber via a link duct and, in a closed position, is suitable for interrupting said link and for connecting said link duct to the replenishing valve (70), each reducer being suitable for going into its closed position when the pressure in the main duct that it connects to the control chamber becomes higher than said limit value.

18. A circuit according to any one of claims 1 to 17, characterized in that the replenishing valve (70; 80; 270, 270') comprises a pressure limiter suitable for being opened by the pressure in the main duct to which its inlet (70A, 80A) is connected.

19. A circuit according to claim 18, characterized in that the replenishing valve (270; 270') comprises a flow-rate regulation device (270, 270A; 270', 270'A).